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Subject: Usage notes: woofer size, directivity, subs, etc.

Posted by [Wayne Parham](#) on Wed, 04 Feb 2009 19:14:55 GMT

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I used to make speakers with 18" woofers, but don't anymore. They don't make sense for

midrange isn't usually as good as a smaller driver provides. You can shoehorn a directivity match by moving the crossover down, but then the tweeter suffers. A horn's ability to provide pattern control diminishes at lower frequencies. It is just harder to make the stretch in the all important midrange band with an 18" woofer.

Beyond that, high efficiency 18" woofers need large boxes for deep extension, and sometimes don't really reach the low notes even then. Even if they did, I'd rather use 2-4 cubic foot mains with 12" or 15" midwoofers and augment those with subs. When setup properly, this configuration not only increases extension but also smoothes room modes. When I adopted that philosophy several years back, I stopped making speakers with 18" woofers.

cabinet tuned to 30Hz. You can still use a couple more subs to smooth room modes, but you really don't need them for extension. The large cabinet packs a whallop with those woofers, and being tucked back away in a corner, it doesn't seem to take up much space.

and improved imaging. But one side benefit, for rooms that have suitable corners, is that this style better than big boxes out in the open.

crossed over by 250Hz. The woofer and midrange blend together in the lower midrange, which improves integration and makes response smoother. But the woofer is not required to play much of the midrange band, and is out of the picture above Middle C. That opens up your choice of woofers, because you don't have to worry about how they act above a few hundred Hertz.

If you're going to use a woofer up to 600Hz or 800Hz, most of the fundamentals of instruments will be coming from the woofer. That's what I would call a midwoofer. For midwoofer service, I really prefer the JBL 2226, or its predecessors, the 2205 and 2225. The cones are well behaved at midrange frequencies, so voice and instruments sound very natural. I would suggest going with one of those if you need to run them up to match a 650Hz tractrix horn. Then for VLF, run two to four dedicated subs in a multi-sub configuration.

Still, since you already have the JBL 2241, it makes sense to me to give it a try. You can go with

the cabinet 8ft3 or 9ft3 tuned to 30Hz, no smaller than 6ft3 and no larger than 10ft3. That will give you a smooth rolloff curve on the bottom end that sounds good in the room and doesn't ever sound boomy.

As 18" woofers go, the 2241 is very smooth. You can push it to 600Hz or maybe a little higher, but I'd not go much above 800Hz. The higher you go, the rougher it will sound. A fast rolloff slope can help, but you'll be limited there because your choice will also impact summing with the mid/hi horn. But you may be able to get it to work. If not, you can always sell the 2241 and get a 2226 instead, which I am confident you'll be happy with in your application.

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